DATA SHEET

Extreme Networks S-Series®

Terabit-class, Convergence-ready, Modular Switch for Edge-to-Core and Data Deployments

Extreme Networks S-Series Highlights

Terabit-class performance with granular traffic visibility and control

Automated network provisioning for virtualized, cloud, and converged voice/video/data environments

High availability redundancy features including self-healing, maximizes business continuity for critical applications

Versatile high density solution with highly flexible connectivity and power options reduces cost of ownership

Built-in hardware support for 40Gb and 100 Gbps Ethernet, emerging protocols (IPv6) and large scale deployment protocols (MPLS)

Greater than 9.5 Tbps backplane capacity with 2.56 Tbps switching capacity and 1920 Mpps throughput

Product Overview

The Extreme Networks S-Series family of flow-based switches brings high performance distributed switching to the network access layer, distribution layer, enterprise/campus core, and data center. The S-Series family consists of the 8-slot S8, 6-slot S6, 4-slot S4, 3-slot S3, 1-slot S1A chassis and the fixed configuration S-Series Stand Alone (SSA). The S-Series delivers some of the highest switching port densities per rack unit available in the market and is future-proofed and scalable to provide overall system capacities of up to nine and a half Terabits. All chassis support 802.3af and 802.3at (high power) standards-based PoE and PoE+ via an integrated or field installable power system. There are a variety of I/O modules designed and optimized for deployment at the network access layer, distribution layer, network core and data center that provide a broad array of connectivity options for copper and fiber cabling infrastructures.

The S-Series provides a highly resilient distributed switching and routing architecture with management and control functions embedded in each module, delivering unsurpassed reliability, scalability, and fault tolerance. Organizations can cost-effectively add connectivity as needed while scaling performance capacity with each new module. The highly available architecture makes forwarding decisions, and enforces security policies and roles while classifying/prioritizing traffic at wire speed. All I/O modules provide the highest Quality of Service (QoS) features for critical datacenter and campus applications such as voice and HD video even during periods of high network traffic load while also proactively preventing Denial of Service (DoS) attacks and malware propagation.

The S-Series implements our custom packet processor technology, CoreFlow2, which provides an industry-leading, flow-based switching architecture to intelligently manage individual user and application conversations—far beyond the capabilities of switches that are limited to using VLANs, ACLs, and ports to implement role-based access controls. Users are identified and roles are applied to ensure each individual user can access their business-critical applications no matter where they connect to the network.

S-Series policy rules combined with deep packet inspection can intelligently identify and automatically respond to security threats while improving reliability and quality of the user experience.

A significant differentiator for the S-Series is the ability to collect NetFlow data at wire-speed on every port, providing total visibility into network resource consumption for users and applications. The S-Series is the only enterprise switch to support multi-user, multi-method authentication on every port - absolutely essential when you have devices such as IP phones, computers, printers, copiers, security cameras, badge readers, and virtual machines connected to the network. When quality of service, device and application prioritization and security matters, there is no better choice than the Extreme Networks S-Series.

FORWARDING PARADIGM

The Extreme Networks S-Series chassis utilize both fabric-based point-to-point and fabric-less meshed forwarding architectures. The S1A, S4, S6, and S8 chassis use a fabric-based forwarding architecture that provides multiple high bandwidth data paths between I/O modules, while the S3 chassis provides a high performance, fabric-less meshed forwarding architecture ideally suited for highly available network edge wiring closet deployments. All chassis are optimized for redundant high performance switching and routing as well as providing flexible connectivity and the ability to add features and scale performance as required and as new technologies become available.

I/O fabric modules provide scalable, high performance data paths as well as a full complement of front panel interfaces with flexible modular interface options. A single I/O fabric may be used in either an S1A, S4, S6, or an S8 chassis, however, the use of two I/O fabrics creates a load sharing fabric pair that provides up to 2560 Gbps switching capacity and adds high-availability features. The S8 and S6 chassis augments the load sharing fabric pair by allowing the addition of a third I/O fabric module, increasing the system reliability and performance in the unlikely event of an I/O fabric failure. An S8 or S6 system with two I/O fabrics installed will gracefully reduce the fabric switching capacity by 50 percent, in the event of an I/O fabric failure, however, when a third I/O fabric is installed, the system will maintain a full 2560 Gbps of switching performance. The load sharing fabric architecture ensures the highest availability and performance for the most demanding and mission-critical networks.

Performance and Port Density Specification

	SSA130	SSA150	SSA180	S1	S3	S4	S6	S8
CHASSIS SLOTS				1	3	4	6	8
System Switching Capacity	40 Gbps	120 Gbps	120 Gbps	320 Gbps	360 Gbps	1.28 Tbps	1. 92 Tbps	2.56 Tbps
System Switching Throughput	30 Mpps	90 Mpps	90 Mpps	240 Mpps	360 Mpps	960 Mpps	1440 Mpps	1920 Mpps
Total Backplane Capacity				320 Gbps	525 Gbps	3 Tbps	7 Tbps	9.5 Tbps
Maximum 10/100/1000 Base-TX Class 3 PoE or 1000Base-X SFP (MGBIC) ports per system	48	48	48 (No PoE)	72	216	288	432	576
Maximum 10GBase-X SFP+ ports per system	4	4	4	24	96	112	168	232
Maximum 40GBase-X QSFP+ ports per system				6		24	36	48

I/O Module Specification

	S130 CLASS MODULES		S140 I/O MODULES				S180 I/O MODULES		
	WIRING CLOSET, DISTRIBUTION LAYER, SMALL NETWORK CORE		WIRING CLOSET, DISTRIBUTION LAYER, SMALL NETWORK CORE				DISTRIBUTION LAYER, SERVER AGGREGATION,		
Part Number	ST4106-0248	SG4101-0248	ST2206-0848A	SG2201-0848	SK2008-0832	SK2009-0824	SK8008-1224	SK8009-1224	SL8013-1206A
Used in	S3/S4/S6/S8 Chassis	S3/S4/S6/S8 Chassis	S3/S4/S6/S8 Chassis	S3/S4/S6/S8 Chassis	S3/S4/S6/S8 Chassis	S3/S4/S6/S8 Chassis	S4/S6/S8 Chassis	S4/S6/S8 Chassis	S4/S6/S8 Chassis
Port Type	RJ45	SFP	RJ45	SFP	SFP+	10GBase-T	SFP+	10GBase-T	QSFP+
Port Quantity	48	48	48	48	32	24	24	24	6
Port Speed	10/100/1000 Mbps	1000 Mbps	10/100/1000 Mbps	1000 Mbps	10 Gbps	10 Gbps	10 Gbps	10 Gbps	40 Gbps
PoE Support	802.3af, 802.3at		802.3af, 802.3at						
Option Module Slots	1, (Type 1)	1, (Type 1)	2, (Type 2)	2, (Type 2)					
Module I/O Throughput	30 Mpps	30 Mpps	120 Mpps	120 Mpps	120 Mpps	120 Mpps	240 Mpps	240 Mpps	240 Mpps
I/O Switching Capacity	40 Gbps	40 Gbps	160 Gbps	160 Gbps	160 Gbps	160 Gbps	320 Gbps	320 Gbps	320 Gbps

Distributed, Flow-Based Architecture

In order to ensure granular visibility and manage traffic without sacrificing performance, the Extreme Networks S-Series implements our CoreFlow2 distributed, flow-based architecture. This architecture ensures that when a specific communications flow is being established between two end points, the first packets in that communication are processed through the multilayer classification engines in the switch I/O modules and I/O fabric modules. In this process, the role is identified, the applicable policies are determined, the packets are inspected, and the action is determined. After the flow is identified, all subsequent packets associated with that flow are automatically handled in the CoreFlow2 ASICs without any further processing. In this way the Extreme Networks S-Series is able to apply a very granular level of control to each flow at full line rate.

I/O Fabric Module Specification

	S130 CLASS I/O FABRIC MODULES	S180 CLASS I/O FABRIC MODULES					
	WIRING CLOSET, DISTRIBUTION LAYER, SMALL NETWORK CORE	DISTRIBUTION LAYER, SERVER AGGREGATION, DATA CENTER CORE, ENTERPRISE					
Part Number	ST4106-0348-F6	ST8206-0848-F8A	SG8201-0848-F8	SK8008-1224-F8	SK8208-0808-F8	SK8009-1224-F8	SL8013-1206-F8A
Used in	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis	S1A/S4/S6/S8 Chassis
Port Type	RJ45	RJ45	SFP	SFP+	SFP+	10GBase-T	QSFP+
Port Quantity	48	48	48	24	8	24	6
Port Speed	10/100/1000 Mbps	10/100/1000 Mbps	1000 Mbps	10 Gbps	10 Gbps	10 Gbps	40 Gbps
PoE Support	802.3af, 802.3at	802.3af, 802.3at					
Option Module Slots	1, (Type 2)	2, (Type 2)	2, (Type 2)		2, (Type2)		
Module I/O Throughput	45 Mpps	120 Mpps	120 Mpps	240 Mpps	120 Mpps	240 Mpps	240 Mpps
I/O Switching Capacity	60 Gbps	160 Gbps	160 Gbps	320 Gbps	160 Gbps	320 Gbps	320 Gbps
Fabric Throughput (Each)	480 Mpps	960 Mpps	960 Mpps	960 Mpps	960 Mpps	960 Mpps	960 Mpps
Fabric Throughput (Load Sharing Pair)	960 Mpps	1920 Mpps	1920 Mpps	1920 Mpps	1920 Mpps	1920 Mpps	1920 Mpps

SYSTEM SUMMARY

Extreme Networks S-Series I/O modules are high performance, fully-featured switch routers that deliver a fully distributed switching system as well as management and route processing capabilities, where each module is individually driven and managed by on-board processors. Extreme Networks CoreFlow2 ASICs, together with firmware microprocessors, create a traffic control solution that delivers high performance and flexibility. This distributed ASIC-based architecture increases processing power as modules are added for a higher level of scalability and flexibility.

I/O fabrics and I/O modules are available with a wide array of interface types and port densities (10/100/1000BASE-TX, 1000BASE SFP, 10GBASE SFP+, 10GBASE-T and 40GBASE QSFP+) to address varied network requirements. All triple speed copper I/O modules are PoE-enabled. A number of I/O modules also include either one or two option-module slots; an option-module slot provides additional media and port speed connectivity via triple speed copper, Gigabit SFP, 10 Gigabit SFP+ or a combination of gigabit and SFP+ Ethernet ports. This further simplifies network design and reduces the cost of network deployments. All S-Series I/O Fabrics and I/O Modules include deep packet buffers per port to avoid dropped packets in the event of network congestion.

All S-Series 10 Gigabit Ethernet SFP+ ports are dual speed andwill also accept standard Gigabit SFP transceivers, and 10GBASE-T ports can also be run in 1 Gigabit Ethernet mode. This capability enables a smooth migration path from Gigabit Ethernet for connecting devices to 10 Gigabit Ethernet in the future. Customers can use Gigabit Ethernet optical uplinks today and migrate to 10 Gigabit at their own pace. In addition, all Gigabit SFP ports will accept Fast Ethernet 100BASE-FX/TX SFPs to enable connection of legacy devices.

S180 CLASS I/O AND I/O FABRIC MODULES

The S180 class is designed to support the most demanding areas of the network where sustained high volumes of traffic are most common. Both 10 Gigabit and 40 Gigabit Ethernet modules incorporate advanced traffic management mechanisms and large packet buffers to ensure optimal network performance, predictability and reliability. The S180 Class is optimized for 10Gb and 40Gb Ethernet aggregation and the rigorous requirements of enterprise network core and data center. These modules support the full range of Extreme Networks OneFabric, CoreFlow2 features and advanced switching and routing without the need for additional licensing. The S180 class includes support for Virtual Switch Bonding via dedicated VSB SFP+ ports, which

simplifies network virtualization functionality for the S-Series product lines. Dedicated VSB ports and support for Data Center Bridging protocols enable scalable virtual services in a data center environment.

S140 CLASS I/O MODULES

The S140 class delivers a high performance, mid-tier switching solution that provides increased density and a lower-cost alternative in 10G aggregation scenarios. These modules offer the option for a high density, fabric-less aggregation solution by deploying gigabit and 10 Gigabit aggregation in the S3 chassis. The S140 class also provides high performance SFP and triple-speed with media flexibility and support for IEEE 802.3af PoE and IEEE 802.3at high power PoE standards. The S140 modules provide the gigabit aggregation connectivity for the S180 class chassis configurations. Dedicated VSB ports via Option Module and support for Data Center Bridging protocols enable scalable virtual services in a data center environment.

S130 CLASS I/O MODULES

S130 class I/O modules are optimized for use in wiring closets for user connectivity, in the distribution layer to aggregate edge switches and in small and medium network cores. These modules provide high density with media flexibility and support for IEEE 802.3af PoE and IEEE 802.3at high power PoE standards. S130 class I/O modules deliver scalable triple speed performance and flexibility to ensure compatibility with today's high performance workstations, as well as legacy devices, while providing the highest levels of QoS, security, and bandwidth control via flow-based switching.

S130 class I/O modules include a unique feature that enables full line rate forwarding for bandwidth hungry workstations or when downstream switches are connected. Flex-Edge technology provides line rate forwarding through the switch even when the systems uplinks are in an oversubscribed state. This ensures that critical and time sensitive data passes through the switch to its destination at line rate, unlike inefficient methods used by other solutions on the market.

S130 class I/O modules support up to 512 users with up to eight authenticated users per port in contrast to S140/S180 class modules which support up to 1,024 users/devices per module with no restriction to the number of users per port. In cases where an S130 class I/O module needs to support more than 8 authenticated users per port, a software upgrade license may be purchased and applied to the module that enables this capability. The S-EOS-PPC license is required for each S130 class I/O module that requires 8 users per port restriction removed. Only one S-EOS-PPC license is required for the S130 class SSA switch.

Performance/Capacity

Switching Fabric Bandwidth

2560 Gbps Load Sharing Fabric Pair

Switching Throughput

1920 Mpps

(Measured in 64-byte packets)

IPv4/IPv6 Routing Throughput

1920 Mpps

(Measured in 64-byte packets)
(Capacities above are for an S8 System)

Address Table Size

128K MAC Addresses

VLANs Supported

4094

Transmit Queues

12 for S130, SSA130/SSA150

16 for S180/S140, SSA180

Classification Rules

57K per chassis

Main Memory

S130, SSA130:

1 GB Per Module

S140/S180, SSA180/SSA150A:

2 GB Per Module

Flash Memory: 1 GB Per Module

Packet Buffering

Chassis Buffer Size (Max.)

S1	3 GB
S3	6 GB
S4	12 GB
S6	18 GB
S8	24 GB
SSA130 Class	1.0 GB
SSA150/180 Class	1.5 GB

(Actual chassis buffering capacity is dependent on the modules classes installed)

HIGH AVAILABILITY HW FEATURES

The S-Series includes many standard high availability features. These hardware-based features allow the S-Series to be deployed in mission critical environments that require 24/7 availability.

High Availability Summary:

- Passive chassis backplanes S1A, S3, S4, S6, S8 chassis
- Meshed backplane architecture in the S3 chassis
- Hot swappable fan trays with multiple cooling fans
- Separate system and PoE power supplies
- Hot swappable power supplies
- Multiple AC input connections for power circuit redundancy
- Load sharing/redundant I/O fabrics S4, S6, and S8 chassis
- N+1 fabric redundancy in the S8 and S6 chassis
- Hot swappable I/O fabrics and I/O modules
- Multiple host CPU for N+X redundancy
- Virtual Switch Bonding

FEATURE-RICH FUNCTIONALITY

Examples of additional functionality and features that are supported in the Extreme Networks S-Series.

Features Summary:

- Multi-user, Multi-method Authentication and Policy per port
- Line Rate, non-sampled Netflow (v5/v9)
- Server Load Balancing (LSNAT)
- Network Address Translation (NAT)
- Generic Route Encapsulation (GRE)
- Flow Setup Throttling (FST)
- Flex-Edge Technology
- High Availability Firmware Upgrades (HAU)
- Anti-Spoofing Protection and User tracking
- Virtual Private Port Service (GRE with Layer 2)
- Fabric Routing with IP Host Mobility
- Application Policy Controls (Bonjour, uPNP)
- Remote Port and Flow Mirrors
- Policy driven mirrors
- Layer 2 MAC Access Control Lists
- RADIUS Server Load Balancing
- DHCP Server (IPv4/IPv6)
- IPSLA
- Routing as a Service (RaaS)

Features/Standards and Protocols

SWITCHING/VLAN SERVICES

- Generic VLAN Registration Protocol (GVRP)
- 802.1ab LLDP-MED
- 802.1ad Provider Bridges
- 802.1ag Connectivity Fault Management (CFM)
- 802.1ak Multiple VLAN Registration Protocol (MVRP)
- 802.1aq (SPB) Shortest Path Bridging
- 802.1ax-2008 / 802.3ad Link Aggregation
  - up to 64 groups with up to 8 ports in a group
- 802.1d MAC Bridges
- 802.1q VLANs
- 802.1s Multiple Spanning Tree
- 802.1t Path Cost Amendment to 802.1D
- 802.1w Rapid re-convergence of Spanning Tree
- 802.3 2008 Clause 57 (Ethernet OAM – Link Layer OAM)
- 802.3ab Gigabit Ethernet (copper)
- 802.3ae 10 Gigabit Ethernet (fiber)
- 802.3an 10GBASE-T (copper)
- 802.3az Energy Efficient Ethernet (EEE)
- 802.3ba 40 Gigabit Ethernet
- 802.3u Fast Ethernet
- 802.3x Flow Control
- 802.3z Gigabit Ethernet (fiber)
- IP Multicast (IGMPv1,v2,v 3)
- IGMP v1/v2/v3 Snooping and Querier
- Jumbo Packet with MTU Discovery Support for Gigabit (9216 bytes)
- Link Flap Detection
- Dynamic Egress (Automated VLAN Port Configuration)
- Data Center Bridging
  - 802.1Qaz
- ETS (Enhanced Transmission Selection)
- DCBx (Data Center Bridge Exchange Protocol)
  - 802.1Qbb PFC (Priority Flow Control)
  - 802.1Qau Congestion Notification
- MLD IPv6 Snooping and Querier
- Virtual Switch Bonding (VSB)
- Anti-Spoofing Suite
  - DHCP Snooping
  - Dynamic Arp Inspection (DAI)
  - IP Source Guard

IP/ROUTING FEATURES

- Static Routes
- Standard ACLs
- OSPF with Multipath Support
- OSPF Passive Interfaces
- IPv6 Routing Protocol
- Extended ACLs
- Policy-based Routing
- NAT Network Address Translation
- TWCB Transparent Web Cache Redirect
- VRF Virtual Routing and Forwarding (IPv6 and IPv4)
- Border Gateway Routing Protocol - BGPv4
- PIM Source Specific Multicast - PIM SSM
- RFC 147 Definition of a socket
- RFC 768 UDP
- RFC 781 Specification of (IP) timestamp option
- RFC 783 TFTP
- RFC 791 Internet Protocol
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 Telnet
- RFC 894 Transmission of IP over Ethernet Networks
- RFC 919 Broadcasting Internet Datagrams
- RFC 922 Broadcasting IP datagrams over subnets
- RFC 925 Multi-LAN Address Resolution
- RFC 950 Internet Standard Subnetting Procedure
- RFC 951 BOOTP
- RFC 959 File Transfer Protocol
- RFC 1027 Proxy ARP
- RFC 1034 Domain Names - Concepts and Facilities
- RFC 1035 Domain Names - Implementation and Specification
- RFC 1071 Computing the Internet checksum

Features/Standards and Protocols (cont.)

- RFC 1112 Host extensions for IP multicasting
- RFC 1122 Requirements for IP Hosts - Comm Layers
- RFC 1123 Requirements for IP Hosts - Application and Support
- RFC 1157 Simple Network Management Protocol
- RFC 1191 Path MTU discovery
- RFC 1195 Use of OSI IS-IS for Routing in TCP/IP
- RFC 1245 OSPF Protocol Analysis
- RFC 1246 Experience with the OSPF Protocol
- RFC 1265 BGP Protocol Analysis
- RFC 1266 Experience with the BGP Protocol
- RFC 1323 TCP Extensions for High Performance
- RFC 1349 Type of Service in the Internet Protocol Suite
- RFC 1350 TFTP
- RFC 1387 RIPv2 Protocol Analysis
- RFC 1388 RIPv2 Carrying Additional Information
- RFC 1492 TACAS+
- RFC 1517 Implementation of CIDR
- RFC 1518 CIDR Architecture
- RFC 1519 Classless Inter-Domain Routing (CIDR)
- RFC 1542 BootP: Clarifications and Extensions
- RFC 1624 IP Checksum via Incremental Update
- RFC 1657 Managed Objects for BGP-4 using SMIv2
- RFC 1721 RIPv2 Protocol Analysis
- RFC 1722 RIPv2 Protocol Applicability Statement
- RFC 1723 RIPv2 with Equal Cost Multipath Load Balancing
- RFC 1771 A Border Gateway Protocol 4 (BGP-4)
- RFC 1772 Application of BGP in the Internet
- RFC 1773 Experience with the BGP-4 protocol
- RFC 1774 BGP-4 Protocol Analysis
- RFC 1812 General Routing/RIP Requirements
- RFC 1853 IP in IP Tunneling
- RFC 1886 DNS Extensions to support IP version 6
- RFC 1924 A Compact Representation of IPv6 Addresses
- RFC 1930 Guidelines for creation, selection, and registration of an Autonomous System (AS)
- RFC 1966 BGP Route Reflection
- RFC 1981 Path MTU Discovery for IPv6
- RFC 1997 BGP Communities Attribute
- RFC 1998 BGP Community Attribute in Multi-home Routing
- RFC 2001 TCP Slow Start
- RFC 2003 IP Encapsulation within IP
- RFC 2018 TCP Selective Acknowledgment Options
- RFC 2030 SNTP
- RFC 2080 RIPng (IPv6 extensions)
- RFC 2082 RIP-II MD5 Authentication
- RFC 2104 HMAC
- RFC 2113 IP Router Alert Option
- RFC 2117 PIM -SM Protocol Specification
- RFC 2131 Dynamic Host Configuration Protocol
- RFC 2132 DHCP Options and BOOTP Vendor Extensions
- RFC 2138 RADIUS Authentication
- RFC 2236 Internet Group Management Protocol, Version 2
- RFC 2260 Support for Multi-homed Multi-prov
- RFC 2270 Dedicated AS for Sites Homed to one Provider
- RFC 2276 Architectural Principles of Uniform Resource Name Resolution RFC 2328 OSPFv2
- RFC 2329 OSPF Standardization Report
- RFC 2338 VRRP
- RFC 2362 PIM-SM Protocol Specification
- RFC 2370 The OSPF Opaque LSA Option
- RFC 2373 Address notation compression
- RFC 2374 IPv6 Aggregatable Global Unicast Address Format
- RFC 2375 IPv6 Multicast Address Assignments
- RFC 2385 BGP TCP MD5 Signature Option
- RFC 2391 Load Sharing Using Network Address Translation(LSNAT)
- RFC 2401 Security Architecture for the Internet Protocol
- RFC 2404 The Use of HMAC-SHA-1-96 within ESP and AH
- RFC 2406 IP Encapsulating Security Payload (ESP)
- RFC 2407 Internet IP Security Domain of Interpretation for ISAKMP
- RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP)
- RFC 2409 The Internet Key Exchange (IKE)
- RFC 2428 FTP Extensions for IPv6 and NATs
- RFC 2450 Proposed TLA and NLA Assignment Rule
- RFC 2453 RIPv2

Features/Standards and Protocols (cont.)

- RFC 2460 IPv6 Specification
- RFC 2461 Neighbor Discovery for IPv6
- RFC 2462 IPv6 Stateless Address Auto-configuration
- RFC 2463 ICMPv6
- RFC 2464 Transmission of IPv6 over Ethernet
- RFC 2473 Generic Packet Tunneling in IPv6 Specification
- RFC 2474 Definition of DS Field in the IPv4/v6 Headers
- RFC 2475 An Architecture for Differentiated Service
- RFC 2519 A Framework for Inter-Domain Route Aggregation
- RFC 2545 BGP Multiprotocol Extensions for IPv6
- RFC 2547 BGP/MPLS VPNs
- RFC 2553 Basic Socket Interface Extensions for IPv6
- RFC 2577 FTP Security Considerations
- RFC 2581 TCP Congestion Control
- RFC 2597 Assured Forwarding PHB Group
- RFC 2663 NAT & PAT (NAPT)
- RFC 2685 Virtual Private Networks Identifier
- RFC 2697 A Single Rate Three Color Marker
- RFC 2710 IPv6 Router Alert Option
- RFC 2711 Multicast Listener Discovery (MLD) for IPv6
- RFC 2715 Interoperability Rules for Multicast Routing Protocols
- RFC 2740 OSPF for IPv6
- RFC 2763 Dynamic Hostname Exchange Mechanism for IS-IS
- RFC 2784 Generic Routing Encapsulation Ready
- RFC 2796 BGP Route Reflection
- RFC 2827 Network Ingress Filtering
- RFC 2858 Multiprotocol Extensions for BGP-4
- RFC 2865 RADIUS Authentication
- RFC 2865 RADIUS Accounting
- RFC 2890 Key and Sequence Number Extensions to GRE
- RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
- RFC 2894 Router Renumbering
- RFC 2918 Route Refresh Capability for BGP
- RFC 2966 Prefix Distribution with Two-Level IS-IS
- RFC 2973 IS-IS Mesh Groups
- RFC 2991 Multipath Issues in Ucast & Mcast Next-Hop
- RFC 3022 Traditional NAT
- RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
- RFC 3065 Autonomous System Confederations for BGP
- RFC 3069 VLAN Aggregation for Efficient IP Address Allocation
- RFC 3101 The OSPF Not-So-Stubby Area (NSSA) Option
- RFC 3107 Carrying Label Information in BGP-4
- RFC 3137 OSPF Stub Router Advertisement
- RFC 3162 RADIUS and IPv6
- RFC 3315 DHCPv6
- RFC 3345 BGP Persistent Route Oscillation
- RFC 3359 TLV Code points in IS-IS
- RFC 3373 Three-Way Handshake for IS-IS
- RFC 3376 IGMPv3
- RFC 3392 Capabilities Advertisement with BGP-4
- RFC 3411 SNMP Architecture for Management Frameworks
- RFC 3412 Message Processing and Dispatching for SNMP
- RFC 3413 SNMP Applications
- RFC 3446 Anycast RP mechanism using PIM and MSDP
- RFC 3484 Default Address Selection for IPv6
- RFC 3493 Basic Socket Interface Extensions for IPv6
- RFC 3509 Alternative Implementations of OSPF ABRs
- RFC 3513 IPv6 Addressing Architecture
- RFC 3542 Advanced Sockets API for IPv6
- RFC 3562 Key Mgt Considerations for TCP MD5 Signature Opt
- RFC 3567 IS-IS Cryptographic Authentication
- RFC 3587 IPv6 Global Unicast Address Format
- RFC 3590 MLD Multicast Listener Discovery
- RFC 3595 Textual Conventions for IPv6 Flow Label
- RFC 3596 DNS Extensions to Support IP Version 6
- RFC 3618 Multicast Source Discovery Protocol (MSDP)
- RFC 3623 Graceful OSPF Restart
- RFC 3678 Socket Interface Ext for Mcast Source Filters
- RFC 3704 Network Ingress Filtering
- RFC 3719 Recommendations for Interop Networks using IS-IS
- RFC 3766 Determining Strengths For Public Keys Used For Exchanging Symmetric Keys
- RFC 3768 VRRP

Features/Standards and Protocols (cont.)

- RFC 3769 Requirements for IPv6 Prefix Delegation
- RFC 3787 Recommendations for Interop IS-IS IP Networks
- RFC 3954 NetFlow Services Export Version 9
- RFC 3810 MLDv2 for IPv6
- RFC 3826 The Advanced Encryption Standard (AES) Cipher Algorithm
- RFC 3847 Restart signaling for IS-IS
- RFC 3879 Deprecating Site Local Addresses
- RFC 3956 Embedding the RP Address in IPv6 MCAST Address
- RFC 4007 IPv6 Scoped Address Architecture
- RFC 4023 Encapsulating MPLS in IP
- RFC 4026 Provider Provisioned VPN Terminology
- RFC 4109 Algorithms for IKEv1
- RFC 4167 Graceful OSPF Restart Implementation Report
- RFC 4191 Default Router Preferences and More-Specific Routes
- RFC 4193 Unique Local IPv6 Unicast Addresses
- RFC 4213 Basic Transition Mechanisms for IPv6
- RFC 4222 Prioritized Treatment of OSPFv2 Packets
- RFC 4250 – The Secure Shell (SSH) Protocol Assigned Numbers
- RFC 4251 – The Secure Shell (SSH) Protocol Architecture
- RFC 4252 – The Secure Shell (SSH) Authentication Protocol
- RFC 4253 – The Secure Shell (SSH) Transport Layer Protocol (no support diffie-hellman-group14-sha1)
- RFC 4254 – The Secure Shell (SSH) Connection Protocol
- RFC 4256 – Generic Message Exchange Authentication for the Secure Shell Protocol (SSH)
- RFC 4264 BGP Wedgies
- RFC 4265 Definition of Textual Conventions for (VPN) Management
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4272 BGP Security Vulnerabilities Analysis
- RFC 4273 Managed Objects for BGP-4 using SMIv2
- RFC 4274 BGP-4 Protocol Analysis
- RFC 4275 BGP-4 MIB Implementation Survey
- RFC 4276 BGP-4 Implementation Report
- RFC 4277 Experience with the BGP-4 protocol
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4294 IPv6 Node Requirements
- RFC 4301 Security Architecture for IP
- RFC 4302 IP Authentication Header
- RFC 4303 IP Encapsulating Security Payload (ESP)
- RFC 4305 Crypto Algorithm Requirements for ESP and AH
- RFC 4306 Internet Key Exchange (IKEv2) Protocol
- RFC 4307 Cryptographic Algorithms for Use in IKEv2
- RFC 4308 Cryptographic Suites for IPSec
- RFC 4360 BGP Extended Communities Attribute
- RFC 4364 BGP/MPLS IP VPNs
- RFC 4365 Applicability Statement for BGP/MPLS IP Virtual Private Networks (VPNs)
- RFC 4384 BGP Communities for Data Collection
- RFC 4419 – Diffie-Hellman Group Exchange for the Secure Shell (SSH) Transport Layer Protocol (no support diffie-hellman-group-exchange-sha256)
- RFC 4443 ICMPv6 for IPv6
- RFC 4451 BGP MULTI_EXIT_DISC (MED) Considerations
- RFC 4456 BGP Route Reflection
- RFC 4486 Subcodes for BGP Cease Notification Message
- RFC 4541 IGMP Snooping
- RFC 4541 MLD Snooping
- RFC 4552 Authentication/Confidentiality for OSPFv3
- RFC 4577 OSPF as PE/CE Protocol for BGP L3 VPNs
- RFC 4601 PIM-SM
- RFC 4602 PIM-SM IETF Proposed Std Req Analysis
- RFC 4604 IGMPv3 & MLDv2 & Source-Specific Multicast
- RFC 4607 Source-Specific Multicast for IP
- RFC 4608 PIM--SSM in 232/8
- RFC 4610 Anycast-RP Using PIM
- RFC 4611 Multicast Source Discovery Protocol (MSDP) Deployment Scenarios
- RFC 4632 Classless Inter-Domain Routing (CIDR)
- RFC 4659 BGP-MPLS (VPN) Extension for IPv6 VPN
- RFC 4716 – The Secure Shell (SSH) Public Key File Format
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 4760 Multiprotocol Extensions for BGP-4
- RFC 4835 CryptoAlgorithm Requirements for ESP and AH
- RFC 4861 Neighbor Discovery for IPv6

Features/Standards and Protocols (cont.)

- RFC 4862 IPv6 Stateless Address Autoconfiguration
- RFC 4878 OAM Functions on Ethernet-Like Interfaces
- RFC 4884 Extended ICMP Multi-Part Messages
- RFC 4893 BGP Support for Four-octet AS Number Space
- RFC 4940 IANA Considerations for OSPF
- RFC 5059 Bootstrap Router (BSR) Mechanism for (PIM)
- RFC 5065 Autonomous System Confederations for BGP
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
- RFC 5186 IGMPv3/MLDv2/MCAST Routing Protocol Interaction
- RFC 5187 OSPFv3 Graceful Restart
- RFC 5250 The OSPF Opaque LSA Option
- RFC 5291 Outbound Route Filtering Capability for BGP-4
- RFC 5292 Address-Prefix-Outbound Route Filter for BGP-4
- RFC 5294 Host Threats to PIM
- RFC 5301 Dynamic Hostname Exchange Mechanism for IS-IS
- RFC 5302 Domain-wide Prefix Distribution with IS-IS
- RFC 5303 3Way Handshake for IS-IS P2P Adjacencies
- RFC 5304 IS-IS Cryptographic Authentication
- RFC 5306 Restart Signaling for IS-IS
- RFC 5308 Routing IPv6 with IS-IS
- RFC 5309 P2P operation over LAN in link-state routing
- RFC 5310 IS-IS Generic Cryptographic Authentication
- RFC 5340 OSPF for IPv6
- RFC 5396 Textual Representation AS Numbers
- RFC 5398 AS Number Reservation for Documentation Use
- RFC 5492 Capabilities Advertisement with BGP-4
- RFC 5668 4-Octet AS Specific BGP Extended Community
- RFC 5798 Virtual Router Redundancy Protocol (VRRP) Version 3
- RFC 6104 Rogue IPv6 RA Problem Statement
- RFC 6105 IPv6 Router Advertisement Guard
- RFC 6106 IPv6 RA Options for DNS Configuration
- RFC 6164 Using 127-Bit IPv6 Prefixes on Inter-Router Links
- RFC 6296 IPv6-to-IPv6 Network Prefix Translation
- RFC 6549 OSPFv2 Multi-Instance Extensions
- RFC 4577 OSPF as PE/CE Protocol for BGP L3 VPNs
- RFC 6565 OSPFv3 as PE/CE Protocol for BGP L3 VPNs

NETWORK SECURITY AND POLICY MANAGEMENT

- 802.1X Port-based Authentication
- Web-based Authentication
- MAC-based Authentication
- Convergence Endpoint Discovery with Dynamic Policy Mapping (Siemens HFA, Cisco VoIP, H.323, and SIP)
- Multiple Authentication Types per Port Simultaneously
- Multiple Authenticated users per Port with unique policies per user/End System (VLAN association independent)
- RFC 3580 IEEE 802.1 RADIUS Usage Guidelines, with VLAN to Policy Mapping
- Worm Prevention (Flow Set-Up Throttling)
- Broadcast Suppression
- ARP Storm Prevention
- MAC-to-Port Locking
- Span Guard (Spanning Tree Protection)
- Stateful Intrusion Detection System Load Balancing
- Stateful Intrusion Prevention System and Firewall Load Balancing
- Behavioral Anomaly Detection/Flow Collector (non-sampled Netflow)
- Static Multicast Group Provisioning
- Multicast Group, Sender and Receiver Policy Control
- Extreme Networks Private VLANs

CLASS OF SERVICE

- Strict Priority Queuing
- Weighted Fair Queuing with Shaping
- Hybrid Arbitration
- 16/12 Transmit Queues per Port
- Up to 3,072 rate limiters for S130 Class products
- Up to 12,288 rate limiters for S180 Class products
- Packet Count or Bandwidth based Rate Limiters. (BandwidthThresholds between 8 Kbps and 4 Gbps)
- IP ToS/DSCP Marking/Remarking
- 802.1D Priority-to-Transmit Queue Mapping

Features/Standards and Protocols (cont.)

EXTREME NETWORKS NETWORK MANAGEMENT SUITE (NMS)

- NetSight Base
- NetSight
- NetSight Advanced
- Data Center Manager

NETWORK MANAGEMENT

- Dual Stack Management: IPv4 and IPv6
- SNMP v1/v2c/v3
- Web-based Management Interface
- Industry Common Command Line Interface
- Multiple Software Image Support with Revision Roll Back
- Multi-configuration File Support
- Editable Text-based Configuration File
- COM Port Boot Prom and Image Download via ZMODEM
- Telnet Server and Client
- Secure Shell (SSHv2) Server and Client
- Cabletron Discovery Protocol
- Cisco Discovery Protocol v1/v2
- Syslog
- FTP Client
- Simple Network Time Protocol (SNTP)
- Netflow version 5 and version 9
- RFC 2865 RADIUS
- RFC 2866 RADIUS Accounting
- TACACS+ for Management Access Control
- Management VLAN
- 15 Many to-One-port, One-to-Many Ports, VLAN Mirror Sessions
- Remote Port Mirrors

STANDARD MIB SUPPORT

- RFC 1156 MIB
- RFC 1213 MIB-II
- RFC 1493 Bridge MIB
- RFC 1659 RS-232 MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPF MIB
- RFC 2012 TCP MIB
- RFC 2013 UDP MIB
- RFC 2096 IP Forwarding Table MIB
- RFC 2233 The Interfaces Group MIB using SMIv2
- RFC 2576 SNMP-Community MIB
- RFC 2578 SNMPv2 SMI
- RFC 2579 SNMPv2-TC
- RFC 2613 SMON MIB
- RFC 2618 RADIUS Client MIB
- RFC 2620 RADIUS Accounting MIB
- RFC 2674 802.1p/q MIB
- RFC 2787 VRRP MIB
- RFC 2819 RMON MIB (Groups 1-9)
- RFC 2863 IF MIB
- RFC 2864 IF Inverted Stack MIB
- RFC 2922 Physical Topology MIB
- RFC 2934 PIM MIB for IPv4
- RFC 3273 HC RMON MIB
- RFC 3291 INET Address MIB
- RFC 3411 SNMP Framework MIB
- RFC 3412 SNMP-MPD MIB
- RFC 3413 SNMPv3 Applications
- RFC 3413 SNMP Notifications MIB
- RFC 3413 SNMP Proxy MIB
- RFC 3413 SNMP Target MIB
- RFC 3414 SNMP User-Based SM MIB
- RFC 3415 SNMP View Based ACM MIB
- RFC 3417 SNMPv2-TM
- RFC 3418 SNMPv2 MIB
- RFC 3433 Entity Sensor MIB
- RFC 3621 Power Ethernet MIB
- RFC 3635 EtherLike MIB
- RFC 4022 MIB for the Transmission Control Protocol (TCP)
- RFC 4087 IP Tunnel MIB
- RFC 4113 MIB for the User Datagram Protocol (UDP)
- RFC 4133 ENTITY MIB
- RFC 4188 Bridge MIB

Features/Standards and Protocols (cont.)

- RFC 4268 Entity State MIB
- RFC 4268 Entity State TC MIB
- RFC 4292 IP Forwarding MIB
- RFC 4293 MIB for Internet Protocol (IP)
- RFC 4382 MPLS/BGP Layer 3 Virtual Private Network (VPN) MIB
- RFC 4444 MIB for IS-IS
- RFC 4560 DISMAN-PING-MIB
- RFC 4560 DISMAN-TRACEROUTE-MIB
- RFC 4560 DISMAN-NSLOOKUP-MIB
- RFC 4624 MSDP MIB
- RFC 4750 OSPFv2 MIB
- RFC 4836 MAU-MIB
- RFC 4836 IANA-MAU-MIB
- RFC 4878 DOT3-OAM-MIB
- RFC 5060 PIM MIB
- RFC 5240 PIM Bootstrap Router MIB
- RFC 5519 MGMD-STD-MIB
- RFC 5643 OSPFv3 MIB
- IANA Address Family Numbers MIB
- IEEE802.1 BRIDGE MIB
- IEEE802.1 CFM MIB
- IEEE802.1 CFM V2 MIB
- IEEE802.1 MSTP MIB
- IEEE802.1 Q BRIDGE MIB
- IEEE802.1 SPANNING TREE-MIB
- IEEE802.3 DOT3 LLDP EXT V2 MIB Partial
- IEEE802.1PAE MIB
- IEEE802.3 LAG MIB
- LLDP MIB
- LLDP EXT MED MIB
- LLDP EXT DOT1 MIB
- LLDP EXT DOT3 MIB
- LLDP EXT DOT3 V2 MIB (IEEE 802.3-2009) ETS Admin table read only
- Draft-ietf-idr-bgp4-mibv2 (Partial Support)
- Draft-ietf-idr-bgp-identifier
- Draft-ietf-idr-as-pathlimit
- Draft-ietf-idr-mrai-dep (Partial Support)
- Draft-ietf-isis-experimental-tlv (Partial Support)
- Draft-ietf-isis-ipv6-te (Partial Support)
- Draft-ietf-ospf-ospfv3-mib
- Draft-ietf-ospf-te-node-addr
- Draft-ietf-idmr-dvmrp-v3-11
- Draft-ietf-vrrp-unified-spec-03.txt

PRIVATE MIB SUPPORT

- CT Broadcast MIB
- CTIF EXT MIB
- CTRON Alias MIB
- CTRON Bridge MIB
- CTRON CDP MIB
- CTRON Chassis MIB
- CTRON Environmental MIB
- CTRON MIB Names
- CTRON OIDS
- CTRON Q Bridge MIB EXT MIB
- Cisco TC MIB
- Cisco CDP MIB
- Cisco NETFLOW MIB
- DVMRP MIB
- Enterasys Flow Limiting MIB
- Enterasys 802.1X Extensions MIB
- Enterasys AAA Policy MIB
- Enterasys Anti-Spoof MIB
- Enterasys Auto Tracking MIB
- Enterasys Class of Service MIB
- Enterasys Configuration Change MIB
- Enterasys Configuration Management MIB
- Enterasys Convergence Endpoint MIB
- Enterasys Diagnostic Message MIB
- Enterasys DNS Resolver MIB
- Enterasys DVMRP EXT MIB
- Enterasys Entity Sensor MIB Ext MIB
- Enterasys IEEE802.3 LAG MIB EXT MIB
- Enterasys IETF Bridge MIB EXT MIB

Features/Standards and Protocols (cont.)

- Enterasys ETF P Bridge MIB EXT MIB
- Enterasys ETH OAM EXT MIB
- Enterasys IF MIB EXT MIB
- Enterasys IEEE802.1 Bridge MIB EXT MIB
- Enterasys IEEE802.1 Q-Bridge MIB EXT MIB
- Enterasys IEEE802.1 Spanning Tree MIB EXT MIB
- Enterasys Jumbo Ethernet Frame MIB
- Enterasys License Key MIB
- Enterasys License Key OIDS MIB
- Enterasys Link Flap MIB
- Enterasys LSNAT-MIB
- Enterasys MAC Authentication MIB
- Enterasys MAC Locking MIB
- Enterasys MAU MIB EXT MIB
- Enterasys MGMT Auth Notification MIB
- Enterasys MGMT MIB
- Enterasys MIB Names Definitions
- Enterasys Mirror Config
- Enterasys MSTP MIB
- Enterasys MULTI Auth MIB
- Enterasys MULTI Topology Routing MIB
- Enterasys MULTI User 8021X MIB
- Enterasys NAT MIB
- Enterasys NETFLOW MIB (v5 & v9)
- Enterasys OIDS MIB Definitions
- Enterasys OSPFEXT MIB
- Enterasys PIM EXT MIB
- Enterasys PFC MIB EXT MIB
- Enterasys Policy Profile MIB
- Enterasys Power Ethernet EXT MIB
- Enterasys PTOPO MIB EXT MIB
- Enterasys PWA MIB
- Enterasys RADIUS ACCT Client EXTMIB
- Enterasys RADIUS AUTH Client MIB
- Enterasys Resource Utilization MIB
- Enterasys RIPv2 EXT MIB
- Enterasys RMON EXT MIB
- Enterasys SNTP Client MIB
- Enterasys Spanning Tee Diagnostics MIB
- Enterasys SYSLOG Client MIB
- Enterasys TACACS Client MIB
- Enterasys TWCB MIB
- Enterasys UPN-TC-MIB
- Enterasys VLAN Authorization MIB
- Enterasys VLAN Interface MIB
- Enterasys VRRP EXT MIB Definitions
- RSTP MIB
- U Bridge MIB
- USM Target Tag MIB
- SNMP REARCH MIB

Specifications are subject to change without notice.

Specifications

PHYSICAL SPECIFICATIONS		
MODEL NUMBER	**DIMENSIONS (H X W X D)**	**RACK UNITS**
S8-Chassis	63.96 cm x 44.70 cm x 47.32 cm (25.19″ x 17.60″ x 18.63″)	14.5U
S8-Chassis-POE4	72.87 cm x 44.70 cm x 47.32 cm (28.69″ x 17.60″ x 18.63″)	16.5U
S8-Chassis-POE8	77.31 cm x 44.70 cm x 47.32 cm (30.44″ x 17.60″ x 18.63″)	17.5U
S6-Chassis	88.70 cm x 44.70 cm x 47.35 cm (34.92″ x 17.59″ x 18.64″)	20U
S6-Chassis-POE4	97.50 cm x 44.70 cm x 47.35 cm (38.39″ x 17.59″ x 18.64″)	22U
S4-Chassis	40.00 cm x 44.70 cm x 47.32 cm (15.75″ x 17.60″ x 18.63″)	9U
S4-Chassis-POE4	48.90 cm x 44.70 cm x 47.32 cm (19.25″ x 17.60″ x 18.63″)	11U
S3-Chassis-A	31.11 cm x 44.70 cm x 47.32 cm (12.25″ x 17.60″ x 18.63″)	7U
S3-Chassis-POEA	37.46 cm x 44.70 cm x 47.32 cm (14.75″ x 17.60″ x 18.63″)	9U
S1-Chassis-A	8.69 cm x 44.88 cm x 60.27 cm (3.42″ x 17.67″ x 23.73″)	2U
SSA S130 and S150A (S-Series Stand Alone)	4.44 cm x 44.70 cm x 59.43 cm (1.75″ x 17.60″ x 23.40″)	1U
SSA S180 (S-Series Stand Alone)	4.37cm x 44.73 cm x 57.30 cm (1.72″ x 17.61″ x 22.55″)	1U

POWER SUPPLIES					
MODEL NUMBER	**CURRENT RATING**	**INPUT VOLTAGE**	**INPUT FREQUENCY**	**POWER OUTPUT (100-120V)**	**(208-240V)**
S-AC-PS	20A	100 - 240 VAC	50 - 60 Hz	1,200W	1,600W
S-AC-PS-15A	15A	100 - 240 VAC	50 - 60 Hz	930W	1,600W
S-DC-PS		48-60 V DC		1200W	
SSA-FB-AC-PS-A (I/O Exhaust)	15A	100 - 240 VAC	50 - 60 Hz	480W	
SSA-FB-AC-PS-B (I/O Intake)	15A	100 - 240 VAC	50 - 60 Hz	480W	
SSA-PS-625	15A	100 - 240 VAC	50 - 60 Hz	625W	625W
SSA-PS-1000W	15A	100 - 240 VAC	50 - 60 Hz	1,000W	1,200W
POE POWER (802.3AF, 802.3AT)					
S-POE-PS	20A	100 - 240 VAC	50 - 60 Hz	1,200W	2,000W
4 Bay POE Power				4,800W (max)	8,000W (max)
8 Bay POE Power				9,600W (max)	16,000W (max)
ENVIRONMENTAL					
Operating Temperature	5° to 40° C (41° to 104° F)				
Storage Temperature	-30° to 73° C (-22° to 164° F)				
Operating Relative Humidity	5% to 95% (non-condensing)				
AGENCY SPECIFICATIONS					
Safety	UL 60950-1, FDA 21 CFR 1040.10 and 1040.11, CAN/CSA C22.2, No. 60950-1, EN 60950-1, EN 60825-1, EN 60825-2, IEC 60950-1, 2006/95/EC (Low Voltage Directive)				
Electromagnetic Compatibility	FCC 47 CFR Part 15 (Class A), ICES-003 (Class A), EN 55022 (Class A), EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZ CISPR-22 (Class A). VCCI V-3. CNS 13438 (BSMI), 2004/108/EC (EMC Directive)				
Environmental	2002/95/EC (RoHS Directive), 2002/96/EC (WEEE Directive), Ministry of Information Order #39 (China RoHS)				

Chassis Model Number Information

PART NUMBER	DESCRIPTION
S8 CHASSIS	
S8-Chassis	S-Series S8 Chassis and fan trays (Power supplies ordered separately)
S8-Chassis-POE4	S-Series S8 Chassis and fan trays with 4 bay PoE subsystem (System and PoE Power supplies ordered separately)
S8-Chassis-POE8	S-Series S8 Chassis and fan trays with 8 bay PoE subsystem (System and PoE Power supplies ordered separately)
S8-POE-8BAY-UGK	S-Series 8 bay PoE upgrade kit for the S8 (PoE Power supplies ordered separately)
S8-POE-4BAY-UGK	S-Series 4 bay PoE upgrade kit for the S8 (PoE Power supplies ordered separately)
S8-Midmount-Kit	S-Series S8 Chassis 19" midmount installation rack kit can be used with all S8 chassis types
S6 CHASSIS	
S6-Chassis	S-Series S6 Chassis and fan trays. Front to back cooling. (Power supplies ordered separately)
S6-Chassis-POE4	S-Series S6 Chassis and fan tray with 4 bay POE subsystem. Front to back cooling. (System and POE power supplies ordered separately)
S6-Midmount-Kit	S-Series S6 Chassis 19" midmount installation rack kit, can be used with all S6 Chassis types
S6-FAN	S-Series Fan Tray (For use w/ S6)
S4 CHASSIS	
S4-Chassis	S-Series S4 Chassis and fan tray (Power supplies added separately)
S4-Chassis-POE4	S-Series S4 Chassis and fan tray with 4 bay PoE subsystem (System and PoE Power supplies ordered separately)
S4-POE-4BAY-UGK	S-Series 4 bay PoE upgrade kit for the S4 (PoE Power supplies ordered separately)
S4-Midmount-Kit	S-Series S4 Chassis 19" midmount installation rack kit, can be used with all S4 Chassis types
S3 CHASSIS	
S3-Chassis-A	S-Series S3 Chassis and fan tray (Power supplies ordered separately)
S3-Chassis-POEA	S-Series S3 Chassis and Fan Tray with 4 bay PoE subsystem (System and PoE Power supplies ordered separately)
S3-POE-4BAY-UGK	S-Series 4 bay PoE upgrade kit for the S3 (PoE Power supplies ordered separately)
S3-Midmount-Kit	S-Series S3 Chassis 19" midmount installation rack kit, can be used with all S3 Chassis types
S1-CHASSIS	
S1-Chassis-A	S-Series S1 Chassis and fan tray. Compatible with Fabric Modules only. (SSA 1000W Power supplies ordered separately)
S1-Mount-Kit	S-Series S1 Chassis 19" accessory mounting kit. Supports midmount and rail kit installation options for 2 and 4 post racks, can be used with the S1 chassis.
S1-FAN-A	S1 Chassis fan tray, Spare (For use w/S1)
POWER SUPPLIES AND FANS	
S-AC-PS	S-Series AC power supply, 20A 100-240 VAC input (1200W/1600W) (For use w/S3/S4/S6/S8)
S-AC-PS-15A	S-Series AC power supply, 15A, 100-240 VAC input, (930W/1600W) (For use w/S3/S4/S6/S8)
S-POE-PS	S-Series POE power supply, 20A, 100-240 VAC input, (1200/2000 W) (For Use in 4/8 Bay PoE power subsystems)
S-DC-PS	S-Series 48-60v DC Power Supply (For Use w/ S3/S4/S6/S8) (1200W)
S-FAN	S-Series Fan Tray (For use w/ S3/S4/S8)

I/O and I/O Fabric Model Number Information

PART NUMBER	DESCRIPTION
S180 I/O FABRIC MODULES	
SL8013-1206-F8A	S-Series S180 Class I/O-Fabric Module, Load Sharing - 6 Ports 40GBASE-X Ethernet via QSFP+, 4 ports VSB via SFP+ (Used in S1A/S4/S6/S8)
SKL8008-0810-F8	S-Series S180 Class I/O-Fabric Module Load Sharing - 8 Ports 10GBASE-X via SFP+ and 2 ports 40GBASE-X Ethernet via QSFP+ (Used in S1A/S4/S6/S8)
SK8008-1224-F8	S-Series S180 Class I/O - Fabric Module, Load Sharing - 24 Ports 10GBASE-X via SFP+, 4 ports VSB via SFP+ (Used in S1A/S4/S6/S8)
SK8208-0808-F8	S-Series S180 Class I/O - Fabric Module, Load Sharing - 8 Ports 10GBASE-X via SFP+ and two Type2 option slots (Used in S1A/S4/S6/S8)
SK8009-1224-F8	S-Series S180 Class I/O-Fabric Module, Load Sharing - 24 Ports 10GBASE-T via RJ45, 4 ports VSB via SFP+ (Used in S1A/S4/S6/S8), EEE
ST8206-0848-F8A	S-Series S180 Class I/O-Fabric Module, Load Sharing - 48 Ports 10/100/1000BASE-T via RJ45 with PoE+ (802.3at) and two Type2 option slots (Used in S1A/S4/S6/S8), EEE
SG8201-0848-F8	S-Series S180 Class I/O - Fabric Module, Load Sharing - 48 Ports 1000BASE-X via SFP and two Type2 options slots (Used in S1A/S4/S6/S8)
S180 I/O MODULES	
SL8013-1206A	S-Series S180 Class I/O Module - 6 Ports 40GBASE-X Ethernet via QSFP+, VSB expansion slot (Used in S4/S6/S8)
SK8008-1224	S-Series S180 Class I/O Module - 24 Ports 10GBASE-X via SFP+, VSB expansion slot (Used in S4/S6/S8)
SK8009-1224	S-Series S180 Class I/O Module - 24 Ports 10GBASE-T via RJ45, VSB expansion slot (Used in S4/S6/S8), EEE
S140 I/O MODULES	
STL2006-0850	S-Series S140 Class I/O Module 48 Ports 10/100/1000BASE-TX via RJ45 with PoE+ (802.3at) and 2 ports 40GBASE-X Ethernet via QSFP+ (Used in S3/S4/S6/S8), EEE
SGL2001-0850	S-Series S140 Class I/O Module 48 Ports 1000BASE-X ports via SFP and 2 ports 40GBASE-X Ethernet via QSFP+ (Used in S3/S4/S6/S8)
ST2206-0848A	S-Series S140 I/O Module - 48 Ports 10/100/1000BASE-TX via RJ45 with PoE+ (802.3at) and two Type2 option slot (Used in S3/S4/S6/S8), EEE
SG2201-0848	S-Series S140 Class I/O Module - 48 Ports 1000BASE-X ports via SFP and two Type2 option slot (Used in S3/S4/S6/S8)
SK2008-0832	S-Series S140 Class I/O Module - 32 Ports 10GBASE-X via SFP+ (Used in S3/S4/S6/S8)
SK2009-0824	S-Series S140 Class I/O Module - 24 Ports 10GBASE-T via RJ45 (Used in S3/S4/S6/S8), EEE
S130 I/O FABRIC MODULES	
ST4106-0348-F6	S-Series S130 Class I/O - Fabric Class Module, 1280Gpbs Load Sharing - 48Ports 10/100/1000Base-TX via RJ45 with PoE+ (802.3at) and one Type2 option slot (Used in S1A/S4/S6/S8)
S130 I/O MODULES	
ST4106-0248	S-Series S130 Class I/O Module - 48 Ports 10/100/1000BASE-T via RJ45 with PoE+ (802.3at) and one Type1 option slot (Used in S3/S4/S6/S8)
SG4101-0248	S-Series S130 Class I/O Module - 48 Ports 1000BASE-X ports via SFP and one Type1 option slot (Used in S3/S4/S6/S8)
OPTION MODULES	
SOK2208-0102	S-Series Option Module (Type1) - 2 Ports 10GBASE-X Ethernet ports via SFP+ (Compatible with Type1 & Type2 option slots)
SOK2208-0104	S-Series Option Module (Type1) - 4 Ports 10GBASE-X Ethernet ports via SFP+ (Compatible with Type1 & Type2 option slots)
SOK2208-0204	S-Series Option Module (Type2) - 4 10GBASE-X Ethernet ports via SFP+ (Compatible with Type2 option slots)
SOK2209-0204	S-Series Option Module (Type2) - 4 Ports 10GBASE-T with PoE+ (802.3at) (Compatible with Type2 option slots)
SOG2201-0112	S-Series Option Module (Type1) - 12 1000BASE-X ports via SFP (Compatible with Type1 & Type2 option slots)
SOT2206-0112	S-Series Option Module (Type1) - 12 Ports 10/100/1000BASE-TX via RJ45 with PoE+ (802.3at) (Compatible with Type1 & Type2 option slots)
SOTK2268-0212	S-Series Option Module (Type2) - 10 Ports 10/100/1000BASE-T via RJ45 with PoE+ (802.3at) and 2 ports 10GBASE-X via SFP+ (Compatible with Type2 option slots)
SOGK2218-0212	S-Series Option Module (Type2) - 10 Ports 1000BASE-X via SFP and 2 ports 10GBASE-X via SFP+ (Compatible with Type2 option slots)
SOV3208-0202	S-Series Option Module (Type2) - 2 Port VSB Option Module (Compatible with Type2 option slots on S140/S180 modules only)
EXPANSION MODULE	
SOV3008-0404	S-Series VSB Expansion Module - 4 Port VSB Module (Compatible with S180 Class 10Gb/40Gb I/O modules only)

SSA and License Model Number Information

PART NUMBER	DESCRIPTION
SSA S180 (S-SERIES STAND ALONE)	
SSA-T8028-0652	S-Series S180 Class Standalone (SSA) - 48 Ports 10/100/1000BASE-T via RJ45 and 4 ports 10GBASE-X via SFP+, Front to Back cooling (Power supplies not included - Please order separately)
SSA-G8018-0652	S-Series S180 Class Standalone (SSA) - 48 Ports 1000BASE-X via SFP and 4 ports 10GBASE-X via SFP+, Front to Back cooling (Power supplies not included - Please order separately)
SSA-FB-MOUNTKIT	Optional Rack Mount Kit for the SSA 'Front to Back' models - only needed for mounting to all four rack posts
SSA-FB-AC-PS-A	S-Series Standalone (SSA Front to Back) - AC power supply, 15A, 100-240VAC input, I/O side exhaust
SSA-FB-AC-PS-B	S-Series Standalone (SSA Front to Back) - AC power supply, 15A, 100-240VAC input, I/O side intake
SSA-FB-FAN	S-Series Standalone (SSA Front to Back) - Spare fan tray assembly
SSA S130/S150A (S-SERIES STAND ALONE)	
SSA-T4068-0252	S-Series S130 Class Stand Alone (SSA) - 48 Ports 10/100/1000BASE-T via RJ45 with PoE+ (802.3at) and 4 10GBASE-X Ethernet ports via SFP+ (Power supplies not included - Please order separately)
SSA-T1068-0652A	S-Series S150 Class Stand Alone (SSA) - S150 Class - 48 Ports 10/100/1000BASE-T via RJ45 with PoE+ (802.3at) and 4 10GBASE-X Ethernet ports via SFP+ (Power supplies not included - Please order separately)
SSA-AC-PS-625W	S-Series Standalone (SSA S130 and S150 Class) - AC power supply, 15A, 100-240VAC input, (625W)
SSA-AC-PS-1000W	S-Series Standalone (SSA S130 and S150 Class) and S1-Chassis - AC and PoE power supply, 15A, 110-240VAC input, (1000/1200W)
SSA-FAN-KIT	S-Series Stand Alone (SSA S130 and S150 Class) - Replacement fan assembly (Single Fan)
OPTIONAL LICENSES	
S-EOS-L3-S130	S-Series Advanced Routing License (For use on S130 Class Modules) (Enables VRF, BGP, Tunneling)
S-EOS-PPC	S-Series Per Port User Capacity License Upgrade (For use on S130 Class Modules)
S-EOS-VSB	S-Series Multi-slot Virtual Switch Bonding License Upgrade (For use on S130/S150 Class and S140/S180 Class Modules that lack HW VSB ports)
SSA-EOS-VSB	S-Series SSA Virtual Switch Bonding License Upgrade (For use on SSA130 and SSA150 classes only)
SSA-EOS-2XUSER	SSA180/SSA150 double user capacity license
S1-EOS-VSB	S-Series S1 Chassis Virtual Switch Bonding License Upgrade (For use on S1-Chassis-A /S1-Chassis Only)

POWER CORDS

In support of its expanding Green initiatives as of July 1st 2014, Extreme Networks will no longer ship power cords with products. Power cords can be ordered separately but need to be specified at the time order. Please refer to www.extremenetworks.com/product/powercords/ for details on power cord availability for this product.

TRANSCEIVERS

Extreme Networks transceivers provide flexible connectivity options for Ethernet. All Extreme Networks transceivers meet the highest quality for extended life cycle and the best possible return on investment. For detailed specifications, compatibility and ordering information please go to http://www.extremenetworks.com/product/transceivers/

WARRANTY

The Extreme Networks S-Series comes with a one year hardware warranty. For full warranty terms and conditions please go to http://www.extremenetworks.com/support/enterasys-support/how-to/warranty/

SERVICE AND SUPPORT

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support. http://www.extremenetworks.com/support/

ADDITIONAL DETAILS

For additional information on the Extreme Networks S-Series please visit http://www.extremenetworks.com/products/switching-routing/

Extreme networks

http://www.extremenetworks.com/contact / Phone +1-408-579-2800

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